CHAPTER 1

Introduction and Background

Great Blue Heron. Photograph by Nancy J. Curry

1.1 INTRODUCTION

Turnbull National Wildlife Refuge is located on the eastern edge of the Columbia Basin in the Channeled Scablands region of Spokane County in eastern Washington (Map 1). The City of Spokane, a major metropolitan area of nearly 200,000 people, is located 20 miles northeast of the Refuge. The Refuge is located next to the town of Cheney.

In enacting the National Wildlife Refuge System Improvement Act (NWRSIA, also known as Public Law 105-57, 1997), Congress mandated that Comprehensive Conservation Plans be developed for each of the more than 500 refuges in the National Wildlife Refuge System. Pursuant to the National Environmental Policy Act of 1969 (NEPA), this Environmental Assessment (EA) explores different options (alternatives) for the Refuge Comprehensive Conservation Plan (CCP or Plan) and discloses anticipated effects for each alternative.

The CCP will be used as a tool by the Refuge staff and other partners in Refuge management. It will guide management decisions over the next fifteen years and identify strategies for achieving Refuge goals and objectives. A range of alternatives was considered for the CCP. These alternatives are presented in Chapter 2 and analyzed in Chapter 4. Appendices provide supporting information.

1.2 PURPOSE AND NEED

The purpose of the CCP is to provide a coherent, integrated set of management actions to help attain the Refuge vision, goals, and objectives. It identifies the Refuge's role in support of the mission of the National Wildlife Refuge System, provides information on the Service's management actions, and provides a basis for Refuge budget requests.

The CCP is needed for a variety of reasons. Most urgently, Refuge purposes could be threatened without action to protect sources of Refuge water. Groundwater is especially critical to migratory waterbirds breeding in Refuge wetlands. Both shallow and deep aquifers underlying the Refuge are, however, being increasingly tapped for residential and urban development. In addition, widespread land conversion to agricultural and residential uses in the surrounding area has threatened the connectivity of the Refuge to other native habitats, undermining biological integrity.

The Channeled Scablands, of which the Refuge is a piece, is an area of regional and national conservation importance. Crossing several counties in eastern and central Washington state, the Scablands contain densities of wetland basins rivaling the Prairie Pothole region, and at intact sites, waterfowl production exceeds that of the Potholes region. Yet most of the larger wetland basins have been drained and very little of the original Channeled Scablands area is under any kind of public ownership or protected in any other fashion.

Numerous plans attest to the biological significance of the area: it is identified as an important site in the Partners in Flight Columbia Plateau Plan (Altman and Holmes 2000), the Nature Conservancy's Columbia Plateau Ecoregion Plan (Soper 1999), the Draft Intermountain West Waterbird Conservation Plan (Ivey and Herziger 2003), and the Draft Recovery Plan for Water Howellia (Shelley and Gamon 1996).

In addition, the Refuge is currently designated as an Important Bird Area by the Audubon Society. The Channeled Scablands also host the majority of the last remnants of the Palouse steppe vegetation community which is recognized both nationally and at the state level as a critically endangered ecosystem.

The CCP is also needed to address the problem of aspen browsing by an increasing elk population. Aspen clones are not successfully regenerating in many places on the Refuge, in part because of heavy browsing by elk.

[Insert Map 1. Vicinity, Washington]

Finally, the CCP is also needed to evaluate and manage Refuge visitor uses and needs in light of regional recreation trends and demands and in compliance with the National Wildlife Refuge System Improvement Act (NWRSIA). The NWRSIA requires refuges to facilitate compatible wildlife-dependent recreation for six Refuge System priority public uses, namely hunting, fishing, wildlife observation and photography, environmental education and interpretation.

1.3 PROPOSED ACTION

The proposed action is to implement Alternative 3 as described in this EA. This alternative encompasses the following key actions:

(1) The Service would strive, with partners, to protect water resources that support Refuge wetlands and wildlife, and to protect and restore additional wetlands, rare Palouse steppe habitat, aspen / riparian habitats, and pine forests within the Channeled Scablands. To do this, the Service would implement a Land Protection Plan (found in Appendix A). Key elements of this plan include the following:

- Establishing a Stewardship Area surrounding the Refuge, which would encompass 44,536 acres. This area includes the 5,171 acres within the current Approved Refuge Boundary not acquired in fee. The Stewardship Area would function as an informally designated conservation zone surrounding the Refuge. Within the Stewardship Area, the Service would actively work with partners and neighbors for voluntary, cooperative activities that protect habitat and water resources. Key tools include but are not limited to: conservation easements, enrollment in the Wetlands Reserve Program, and technical assistance programs. Key partners include but are not limited to: Inland Northwest Joint Venture, Spokane County, State of Washington, Inland Northwest Land Trust, Ducks Unlimited and The Nature Conservancy.
- In addition, the Service would seek to protect, as part of the National Wildlife Refuge System, up to 12,000 acres of priority lands from willing sellers within the Stewardship Area, through fee, easement or agreement. Priority lands are described in Appendix A.

Land conservation is proposed to address the key threats to Refuge purposes and integrity, in particular threats to surface water and groundwater resources, and the lack of connectivity with surrounding habitats. In addition, land conservation would provide opportunities for protection and restoration of Palouse steppe, wetland, aspen/riparian, and ponderosa pine forest habitats and would provide additional opportunities for wildlife-dependent recreation. These habitats also support several threatened species.

(2) To address habitat damage caused by elk browse, and to provide a recreational opportunity, the Service would approve an annual elk hunting program at the Refuge. The number of permits, length of the seasons, and number of seasons offered would vary depending upon the amount of aspen damage observed each year. The Service would also offer a youth waterfowl hunt each year on the weekend designated by the State for this season each year.

(3) The Service would increase the Environmental Education program, both on and off-Refuge, increase viewpoint and interpretive opportunities on the Refuge, add a small interpretive exhibit area (co-located with new office space), provide more trail miles, and link the Public Use Area to the cross-State Columbia Plateau Trail with a bike trail. If the Refuge were to acquire contiguous additional lands, up to 10 additional trail miles could be added as well as several thousand more acres for elk or waterfowl hunting.

These actions best achieve the Refuge purpose, vision, and goals, and contribute to the Refuge System mission. These actions address the

significant issues, are consistent with principles of sound fish and wildlife management, and fulfill necessary mandates under NWRSIA and other applicable laws.

1.4 CONTENT AND SCOPE OF THE CCP

This CCP provides management guidance for maintenance, restoration, and use of Refuge resources during the next 15 years. Specifically, the CCP for Turnbull Refuge will:

- Set a long term vision, goals, and objectives for the Refuge;
- Implement a Land Protection Plan, including an informally designated Stewardship Area surrounding the Refuge, and describe objectives and conceptual management strategies for areas that may be acquired through fee, easement, or lease;
- Establish public use management goals, objectives, and strategies and evaluate existing and proposed activities for compatibility with the purposes of the Refuge;
- Integrate the Habitat Management Plan goals and objectives that were outlined in 1999; and
- Outline projects, staff, and facilities necessary to support the goals and objectives.

The CCP provides a framework for future Refuge management. The environmental analysis of this plan is addressed at the broader area planning level. It is not a detailed site plan and does not have precise locations for facilities or detailed descriptions of programs.

In this and other chapters of the EA, references are made at times to the Study Area. In order to study the areas within and adjacent to the Refuge that were most critical in terms of hydrologic influence and habitat connectivity, the planning team designated a Study Area encompassing 60,000 acres. For this EA, the planning team specifically analyzed aspects of hydrology, habitat quality, recreation, and land use within the entire Study Area. The Study Area is shown on nearly all maps in the document.

Other sections of text refer to the "Refuge vicinity." This is an area that was not specifically outlined, but generally extends outside the Refuge for approximately 5 to 7 miles in each direction.

The CCP guides Refuge management activities only. In some cases, the CCP makes recommendations that the manager and staff work with private landowners or other management agencies for greater conservation benefit on private lands. In no cases would any project be undertaken on private land without the consent of the landowner.

This Environmental Assessment does not include a detailed analysis of habitat management actions to be taken upon currently owned Refuge lands. That analysis was completed with the Habitat Management Plan (USDI 1999) and Fire Management Plan (USDI 2001).

1.5 BRIEF DESCRIPTION AND HISTORY OF THE REFUGE AND STUDY AREA

The Refuge and Study Area are located within a globally unique geological area known as the Channeled Scablands, created by massive scouring from Ice Age floods 15,000 years ago (Map 2). An extensive complex of deep permanent sloughs, semi-permanent potholes and seasonal wetlands formed in the depressions left in the scoured landscape, while soils only centimeters thick on upland sites, support primarily ponderosa pine intermixed with

(Map 2) - Key Refuge features

grasslands (steppe) and exposed basalt cliffs. Aspen is scattered throughout the area. The juxtaposition of all these contrasting habitats in such close proximity is unique to the Channeled Scablands and creates conditions of exceptional wildlife and plant diversity.

Prior to settlement, ducks, geese, and other waterbirds nested in the area in large numbers. Many waterfowl also used the productive marshes and lakes during the spring and fall migrations.

Because of its unique resources, this area was also important to local indigenous cultures. The Northern Plateau peoples frequented this vicinity in spring to dig the roots of camas, bitterroot, wild onion and numerous species of lomatium, and to gather waterfowl eggs.

Pioneers arrived in the late 1800s and rapidly began altering the landscape. Many of the marshes were drained to expand crop areas for hay. By the late 1920s few wetlands remained; instead a network of drainage ditches became the more common feature of the landscape. In addition, as in most developing communities, timber was harvested, native plant communities were grazed by livestock, exotic plants were introduced, and fire, a natural part of the ecosystem, was suppressed. The wildlife values of the area would have been seriously compromised if it had not been for the failure of the drained lakebeds to produce crops.

The Refuge was established by President Franklin D. Roosevelt in 1937, through Executive Order 7681, as a refuge and breeding ground for migratory birds and other wildlife. Local activists, sportsmen, and naturalists were instrumental in obtaining the area's designation as a National Wildlife Refuge. The Refuge was named after early settler Cyrus Turnbull, who built a cabin on the north end of Turnbull Slough and lived there with his wife and children from 1880 to 1886.

1.5.1 Habitat Management

Since Refuge establishment, the primary focus of habitat management was waterfowl, and in recent years it was directed more specifically at production of redheads. Early management focused on restoring Refuge wetlands that had been drained, and producing grain crops for migratory waterfowl. In later years, management moved from restoration to enhancement, the goal always being to improve habitat conditions to increase or maintain waterfowl populations. Enhancement involved creating additional semi-permanent wetland habitat for breeding diving ducks, especially redheads, and the creation of numerous nesting islands for upland nesting ducks.

Habitat manipulation for redheads involved deepening seasonal and temporary marshes and increasing the interspersion of open water to emergent vegetation with heavy equipment. In the early decades the Refuge also allowed economic uses including timber harvest, grazing, and trapping. Trapping and timber harvest were suspended in 1975 and grazing was discontinued in 1993. The Refuge continues to use prescribed burning, has begun small scale non-commercial thinning, and reinstated commercial thinning to reduce fuel accumulations and promote forest health. With completion of the Habitat Management Plan (HMP) in 1999, the Refuge adopted a mission statement based on the Refuge's purposes and the outstanding wildlife and habitat needs of the area. The Refuge's mission now includes restoring and maintaining the native ecosystem processes of the Channeled Scablands. Under management goals and objectives adopted under the HMP, Refuge habitats are managed to sustain the diversity of the flora and fauna native to the Channeled Scablands.

1.5.2 Public Uses

For many years, the Refuge has maintained a 2,200-acre area open to the public (Public Use Area). Approximately 30,000 visits are made

each year to the Refuge. Wildlife observation is the major activity, and an Auto Tour Route leads visitors to the key observation points. Visitors also hike, take nature photographs, ride bicycles, jog, or cross-country ski. Hunting and fishing have never occurred at the Refuge. Outside the Public Use Area, the Refuge has historically been closed to general visitor use. At times, opportunities are offered within this area for special interpretive tours or community service projects.

The Refuge has had some form of environmental education (EE) for most of its existence. Early in its development, EE was very informal and only a handful of local schools and civic groups visited the Refuge annually. These early groups were provided a talk or nature walk by the Refuge staff member who was free on the day of their visit.

As the local population grew, the Refuge recognized the need for a more formal approach. A self-conducted program was initiated, with the development of an EE classroom and teacher workshops offered in spring and fall. This program, with some enhancement was in operation until 1995 with nearly 2,500 students visiting the Refuge annually.

In 1996, a Refuge Friends group was formed and over $80,000 in grants was received via Friend's fund-raising activities. The influx of funds were used to hire a contractor to coordinate activities and develop a new curriculum. The EE program reached nearly 15,000 students over the next two years.

In the years since, the Refuge has tried to continue to meet this demand by offering a year-round, multi-faceted program facilitated primarily by Americorps members, Student Conservation Association (SCA) volunteers, student interns, and community volunteers. Because of the lack of a stable funding base, and the time commitment involved in training new EE staff yearly, the challenge is to maintain a consistent, high quality program from one year to the next.

1.5.3 Land Status

Like most other refuges, Turnbull Refuge was acquired incrementally over time after its original establishment. The process of adding to the Refuge System is ongoing and will likely continue in a similar incremental pattern. For every refuge, the Approved Refuge Boundary identifies the area within which the Service may acquire lands or interest in land from willing sellers. The Approved Refuge Boundary may contain roads, right-of-ways, or other portions of property that a Refuge would not be interested in acquiring. An Approved Refuge Boundary can be modified by executive order, legislation, congressional legislation, or administrative procedures of the Service.

Currently, the Turnbull Approved Refuge Boundary totals 20,827 acres (acreage figure based on the Service's Geographic Information Systems calculations). Table 1-1 shows the current acres and percent of this area in fee title ownership, lease, and agreement.

Table 1-1. Turnbull NWR Land Status

Land Status	Current Acres*	Percent of Approved Refuge Boundary
Fee title ownership	15,656	75%
Lease (no hunting)	2,018	10%
Agreements	138	<1%
Subtotal managed under NWRS	**17,812**	**86%**
Inholdings within Approved Acquisition Boundary	3,015	14%
Total Acreage within Approved Refuge Boundary	20,827	100%

* Rounded to nearest acre. Source: RPMIS, January 2003.

Of the 15,656 acres under Refuge ownership, approximately 13,650 acres (66 percent) were purchased with Migratory Bird Conservation Commission funds (Duck Stamp monies).

1.6 IMPLEMENTATION AND RELATIONSHIP TO PREVIOUS AND FUTURE REFUGE PLANS

1.6.1 IMPLEMENTATION

Implementation of the objectives and strategies in the preferred alternative will be dependent upon the Refuge receiving adequate funds. Funding will not be immediately available to implement the CCP in full. Project implementation will be guided partly through priorities as outlined in Appendix F - Implementation. If funding for any particular project is not received through appropriations, or obtained through partnerships or private sources, the Service will normally default to the corresponding no action strategy for any particular item.

1.6.2 PREVIOUS PLANS AND DECISIONS

The CCP has evolved from previous planning efforts and/or decisions, including:

- Determination that grazing is incompatible with the purposes of Turnbull Refuge (1990). This determination resulted in a decision to phase grazing out over five years. However, a subsequent court case brought by Defenders of Wildlife and Audubon resulted in a ruling that incompatible uses had to end immediately.
- Operational review completed by the Service in 1990.
- Management Plan by Don White, Parts 1 and 2, 1986.
- Environmental Assessment covering Operation, Maintenance, and Development, 1973.
- Master Plan, 1966.

While the life-span of the CCP is 15 years, periodic reviews will occur. The CCP may be amended as necessary at any time under the principles of adaptive management.

1.6.3 STEP-DOWN PLANS

Under Service planning policy, the CCP is meant to serve as broad guidance to all Refuge management programs. Specifics needed for implementation are generally developed in "step-down management plans" for individual program areas. All step-down plans require appropriate NEPA compliance. Project-specific plans, with appropriate NEPA compliance, may be prepared outside of these step-down plans.

Two important step-down plans–the Habitat Management Plan (HMP) and the Fire Management Plan (FMP)–were completed, together with NEPA compliance, in advance of the CCP (see USDI 1999, and USDI 2001). Those plans are integrated in the CCP with the following important caveats:

- The CCP shall act as the umbrella planning document for the Refuge. The CCP's final overall goals for the Refuge supercede those listed in the HMP and FMP.

- The HMP's habitat objectives, strategies and guidelines prevail over any habitat objectives or guidelines listed in the FMP, in case of conflict.

- The FMP should be regarded primarily as an operational plan. "Goals" "objectives" and "strategies" listed in that plan pertain primarily to fire management actions and should not be taken out of that context.

The status of other step-down plans are listed in Table 1-2.

Table 1-2. Step Down Management Plans Status

Completed Plans (Date Completed)	**Plans Needed Subsequent to CCP**
Habitat Management Plan (1999)	Public Use Management Plan
Fire Management Plan (2001)	Hunt Plan
Emergency Action Plan for Lower Pine Lake (2002) Reviewed annually.	Law Enforcement Plan
Continuation of Operations Plan (2002)	Integrated Pest Management Plan
Safety Plan (2000)	Cultural Resources Management Plan
Sign Plan (1993) Needs to be updated.	Biological Research Plan
Wildlife Inventory Plan (1990) Needs to be updated.	Annual Water Management Plan

1.7 FEDERAL MANDATES AND REFUGE PURPOSES

Refuges are guided by various federal laws and executive orders, Service policies, and international treaties. Fundamental to refuge management are the mission and goals of the National Wildlife Refuge System (NWRS or Refuge System) and the designated purpose of the refuge unit as described in establishing legislation, executive orders, or other documents establishing, authorizing, or expanding a Refuge.

Key concepts and guidance of the Refuge System are covered in the National Wildlife Refuge System Administration Act of 1966, the Refuge Recreation Act of 1962, Title 50 of the Code of Federal Regulations, the Fish and Wildlife Service Manual, and, most recently, the National Wildlife Refuge System Improvement Act of 1997.

1.7.1 NATIONAL WILDLIFE REFUGE SYSTEM IMPROVEMENT ACT

Of all the laws governing activities on National Wildlife Refuges, the National Wildlife Refuge System Improvement Act (NWRSIA or Act) undoubtedly exerts the greatest influence. The NWRSIA amended the Refuge System Administration Act of 1966 by including a unifying mission and goals for all National Wildlife Refuges as a System, a new process for determining compatible refuge uses, and a requirement that each refuge be managed under a CCP, developed in an open public process.

The NWRSIA states that the Secretary shall provide for the conservation of fish, wildlife and plants, and their habitats within the System as well as ensure that the biological integrity, diversity, and environmental health of the System is maintained.

Under NWRSIA, each Refuge must be managed to fulfill the Refuge System mission as well as the specific purposes for which it was established. The Act requires the Service to monitor the status and trends of fish, wildlife, and plants in each Refuge.

Additionally, the Act identifies six priority wildlife-dependent recreational uses. These uses are hunting, fishing, wildlife observation and photography, environmental education and interpretation. As priority public uses of the Refuge system, these uses are to receive enhanced consideration over other uses in planning and management.

When preparing a CCP, Refuge managers must reevaluate compatibility of all general public, recreational, and economic uses (even those

occurring to further habitat management goals) proposed or occurring on a Refuge, including priority public uses. No Refuge use may be allowed or continued unless it is determined to be compatible. A compatible use is a use that, in the sound professional judgement of the Refuge manager, will not materially interfere with or detract from the fulfillment of the mission of the Refuge System or the purposes of the Refuge. Updated compatibility determinations for existing and proposed uses for Turnbull Refuge are in Appendix E.

Section 5 of the Act also states "In administering the System, the Secretary shall ...(F) assist in the maintenance of adequate water quantity and water quality to fulfill the mission of the System and the purposes of each refuge; (G) acquire, under State law, water rights that are needed for refuge purposes..."

The NWRSIA also requires that, in addition to formally established guidance, the CCP must be developed with the participation of the public. Issues and concerns articulated by the public play a key role in guiding alternatives considered during the development of the CCP, and together with the formal guidance, can play a role in selection of the preferred alternative.

1.7.2 Other Laws, Policies, and Orders

Many other federal authorities, including laws, treaties, executive orders, interstate compacts and memoranda of agreement govern Service and Refuge System lands. A list and brief description of each can be found at http://laws.fws.gov.

Over the last couple of years, the Service has developed or revised numerous policies and Director's Orders to reflect the mandates and intent of the NWRSIA. Some of these key policies include the Biological Diversity, Health, and Environmental Health Policy; the Compatibility Policy; the Refuge Planning Policy; the Director's Order on Responsibility of Federal Agencies to Protect Migratory Birds in Accordance with Executive Order 13186; and the Director's Order regarding Coordination and Cooperative Work with State Fish and Wildlife Agency Representatives on Management of the National Wildlife Refuge System. Text of these policies and orders as well as others in draft or under development can be found at: http://refuges.fws.gov/policymakers/nwrpolicies.html.

In developing a CCP, Refuges must consider these broader laws and policies as well as Refuge System and ecosystem goals and visions. The CCP must be consistent with these and also with the Refuge purpose. Figure 1 illustrates the hierarchy of planning guidance in the Fish and Wildlife Service.

1.7.3 National Wildlife Refuge System Mission and Goals

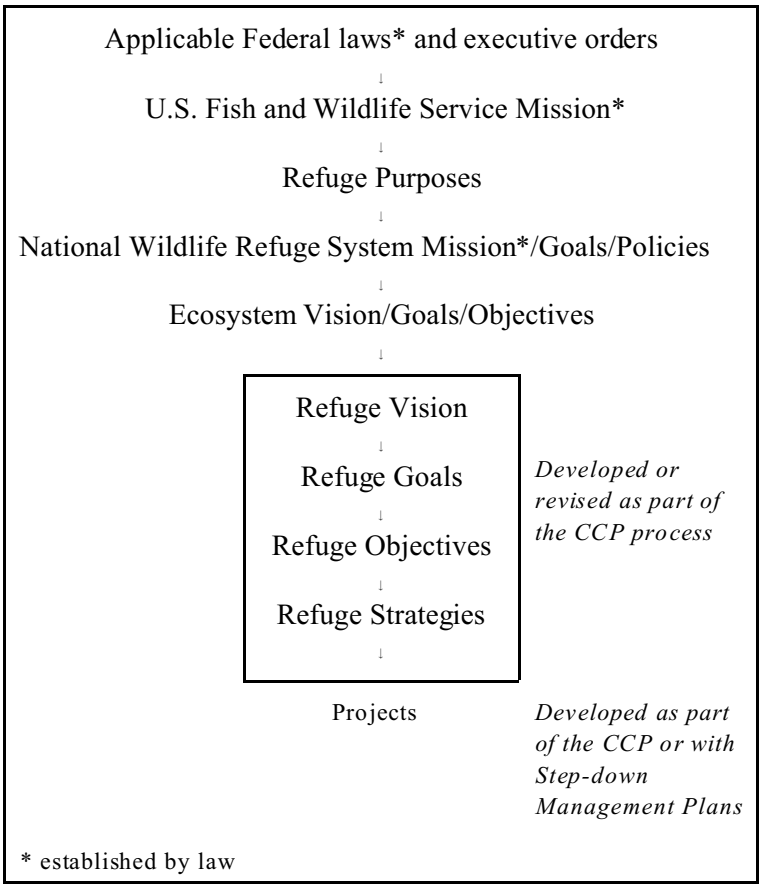
The mission of the National Wildlife Refuge System is:

"*To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.*" (National Wildlife Refuge System Improvement Act of 1997.)

The goals of the National Wildlife Refuge System are: (published in draft in the Federal Register, Jan 16, 2001)

- To fulfill our statutory duty to achieve refuge purpose(s) and further the System mission.
- To conserve, restore where appropriate, and enhance all species of fish, wildlife, and plants that are endangered or threatened with becoming endangered.
- To perpetuate migratory bird, interjurisdictional fish, and marine mammal populations.

Figure 1. Hierarchy of Guidance within the National Wildlife Refuge System



- To conserve a diversity of fish, wildlife, and plants.
- To conserve and restore where appropriate representative ecosystems of the United States, including the ecological processes characteristic of those ecosystems.
- To foster understanding and instill appreciation of native fish, wildlife, and plants, and their conservation, by providing the public with safe, high-quality, and compatible wildlife-dependent public use. Such use includes hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

1.7.4 Significance of the Refuge Purpose

The purpose for which a refuge was established or acquired is of key importance in refuge planning. Purposes must form the foundation for management decisions. By law, refuges are to be managed to achieve their purposes. When a conflict exists between the Refuge System mission and the purpose of an individual refuge, the refuge purpose may supercede the Refuge System mission (Improvement Act, Section 5(a)(3)(D)).

The Service defines the purposes of national wildlife Refuges when a Refuge is established or when new land is added to an existing Refuge. Service realty files document purposes used to acquire lands or to receive transferred lands. At times, purpose statements define

specific uses allowable on the Refuge. Purpose statements often identify the wildlife species or groups of species that receive management emphasis on any particular Refuge.

1.7.5 Purposes for Turnbull National Wildlife Refuge

As explained previously, the following purposes form the foundation for management decisions at Turnbull Refuge, including the development of goals, objectives, and strategies.

- "...as a refuge and breeding ground for migratory birds and other wildlife..." (Executive Order 7681, dated July 30, 1937)
- "...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." (16 U.S.C. 715d Migratory Bird Conservation Act)
- "...suitable for (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species..." (16 U.S.C. 460k-1) and "...the Secretary...may accept and use...real... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors..." (16 U.S.C. 460k-2 and Refuge Recreation Act 16 U.S.C. 460k-460k-4, as amended).
- "...for the development, advancement, management, conservation, and protection of fish and wildlife resources..." (16 U.S.C. 742f(a)(4)) "...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude..." (16 U.S.C. 742f(b)(1) Fish and Wildlife Act of 1956).

1.7.6 Meaning of Terms in Purpose

Migratory Birds. Migratory birds are those defined as such by the following treaties. The birds are listed at 50 CFR § 10.13.

- The treaty between the United States and Great Britain for the protection of migratory birds concluded August 16, 1916 (39 Stat. 1702).
- The treaty between the United States and the United Mexican States for the protection of migratory birds and game mammals concluded February 7, 1936 (50 Stat. 1311).
- The Convention between the Government of the United States and the Government of Japan for the Protection of Migratory Birds and Birds in Danger of Extinction, and their Environment concluded March 4, 1972.
- The Convention between the United States and Union of Soviet Socialist Republics for the Conservation of Migratory Birds and their Environment concluded November 19, 1976 (16 USC 715j).

Inviolate Sanctuary. The original intent of the term "inviolate sanctuary" is found in the Migratory Bird Conservation Act (first passed in 1918 as the Migratory Bird Treaty Act and amended in 1934 and 1938). This Act originally required that all refuges be inviolate sanctuaries and deemed that refuges' primary purposes were as breeding ground and habitat for migratory birds. Migratory bird hunting was prohibited on migratory waterfowl areas by the Act but most other human uses were not addressed. The 1938 amendment to the Act gave refuge managers authority to decide if, when, and how bird hunting would be allowed. After World War II, public demand for opening refuges to recreation increased. The 1949 Duck Stamp Act allowed waterfowl hunting on all refuges, but restricted the percentage of each refuge open to hunting.

Current policy states that portions of a refuge are considered "inviolate sanctuaries" if they were (a) acquired with the approval of the Migratory Bird Conservation Commission (MBCC) for the purpose of an inviolate sanctuary; (b) acquired with the approval of the MBCC or Land and Water Conservation Fund to protect a threatened or endangered species; or (c) established by an instrument or document which states that we intend to manage the area as an "inviolate sanctuary for migratory birds"

or to fulfill the purpose of the Migratory Bird Conservation Act. Policy further allows hunting of migratory game birds on no more than 40 percent of the total area considered an inviolate sanctuary, if compatible with the Refuge purposes and mission. Inviolate sanctuary classification imposes no limits on hunting non-migratory birds, fur bearers, or other game species.

On Turnbull NWR, 13,650 acres were purchased with MBCC funds and fall within the "inviolate sanctuary" provision. Since its inception, the Refuge has been closed to hunting of all kinds. Key advocates for the establishment of the Refuge in the 1930s included the Spokane Sportsman's Association, who believed that the local area should include a sanctuary where hunting would not be permitted.

Incidental Fish and Wildlife-Oriented Recreational Development. The Refuge Recreation Act does not specifically define these terms (although the term "secondary" is also used together with "incidental" in several places), but this Act does emphasize the following points:

- "...any present or future recreational use will be compatible with, and will not prevent accomplishment of, the primary purposes for which the said conservation areas were acquired or established..."
- "...such public recreation use shall be permitted only to the extent that is practicable and not inconsistent with other previously authorized Federal operations or with the primary objectives for which each particular area is established..."

Development, Advancement, Management, Conservation, and Protection. These terms were not defined in the Fish and Wildlife Act (as amended). However, the NWRSIA does define some of these terms as follows:

> "Conserving" "conservation" "manage" "managing" and "management" mean to sustain, and where appropriate, restore and enhance healthy populations of fish, wildlife, and plants utilizing, in accordance with applicable Federal and State laws, methods and procedures associated with modern scientific resource programs. Such methods and procedures include, consistent with the provisions of the Act, protection, research, census, law enforcement, habitat management, propagation, live trapping and transplantation, and regulated taking.

1.8 RELATIONSHIP TO REGIONAL CONSERVATION GOALS

The Refuge System, when and where possible, also tries to assist in meeting conservation goals established by other divisions of the Service, and by other legitimate and credible organizations. Some of these organizations are other federal agencies or interagency groups. Others are state agencies or coalitions of government and nongovernment partners, such as Partners in Flight. Listed below are brief statements of ecosystem goals and objectives that apply within the Refuge vicinity.

1.8.1 INTERMOUNTAIN WEST JOINT VENTURE

The 1998 Intermountain West Joint Venture *Channeled Scablands Focus Area Implementation Plan* (Intermountain West Joint Venture 1998) includes two goals relevant to the Refuge CCP: increasing the quantity and quality of Channeled Scabland wetland, upland, and riparian habitats for breeding, migrating, and wintering waterfowl, as well as other species of management concern; and restoring degraded wetland and upland habitat for waterfowl and other species.

Two federal North American Wetland Conservation Act (NAWCA) grants were awarded recently in the amount of nearly two million dollars for protection and restoration of wetland and riparian habitats in Spokane, Lincoln, and Adams Counties. These first two

grants fund Phases 1 and 2 of a five phase project plan for the Intermountain West Joint Venture Channeled Scablands Focus Area (CSFA), to which the Refuge is a partner.

Fourteen public and private organizations provided matching and in-kind funds in the amount of $3.2 million (Phase II) and $6.2 million (Phase I). Numerous private landowners are also partners in the project. The goals of Phase I and Phase II of the project are to acquire, restore and enhance over 15,000 acres of wetland, riparian, and adjacent upland habitat within the area covered by the CSFA Implementation Plan.

The Refuge is a partner to an ongoing effort by 14 organizations to protect and restore wetlands and riparian areas within the Channeled Scablands. Two million dollars in federal grants were recently awarded to this project. Partners have put up nearly ten million dollars in matching and in-kind funds.

1.8.2 Partners in Flight, Columbia Plateau Plan

The primary goal of the recently published *Conservation Strategy for Landbirds in the Columbia Plateau of Eastern Oregon and Washington* (Altman and Holmes 2000) is to ensure long-term maintenance of healthy populations of native landbirds in shrub-steppe and riparian habitats. The Partners in Flight Conservation Strategy includes an objective to "Initiate actions to increase the size and connectivity of existing riparian and steppe patches through restoration and acquisition efforts."

1.8.3 Birds of Conservation Concern 2002

Based on the efforts and assessment scores of three major bird conservation efforts (Partners In Flight, the U.S. Shorebird Conservation Plan, and the North American Waterbird Conservation Plan), this report identifies, by Service region and by Bird Conservation Region (BCR), the bird species most in need of conservation attention (the list does not include threatened or endangered species or hunted species). Turnbull Refuge straddles BCRs 9 and 10. BCR 9 contains 29 species listed in this report and BCR 10 contains 28 species (USFWS 2002).

1.8.4 GAP Analysis Program Report, Washington State

The 1997 report *Role of Washington State's National Wildlife Refuges in Conserving the State's Biodiversity* (Cassidy et al. 1997b) recommended acquisition priorities for specific zones in the State of Washington. For the east side forest zones and the steppe zones of Washington, the Gap Analysis Program (GAP) authors recommended acquiring areas with the following characteristics: "Oak and ponderosa pine forest, especially where these types are combined with wetlands, and not isolated from upper forest and lower steppe zones, and where maintenance of a natural fire regime is feasible." Within the steppe zones, the GAP authors recommended acquiring: "Upland steppe on deep soil; the palouse zone adjacent to Turnbull Refuge has the highest priority, but deep soil sites in any steppe zone are a high acquisition priority. Wetlands in steppe, especially where wetland protection can be combined with protection of adjacent uplands."

1.8.5 Water Howellia Draft RecoveryPlan

The goal of this recovery plan is "to provide an adequate level of conservation for the species and its habitat so that there will be self-sustaining populations distributed throughout its extant range" (Shelley and Gamon, 1996). According to the draft plan, recovery efforts should "focus on development and implementation of habitat management plans for occurrences on public lands; promotion of voluntary protection on private lands;

conducting biological and habitat management research; monitoring and surveys of known occurrences and potential habitat; dissemination of educational information; promotion of state-level legal protection; and evaluation of the appropriateness and feasibility of reintroducing water howellia into portions of its historic range."

1.8.6 The Nature Conservancy Conservation Strategy, Columbia Plateau Ecoregion

The Nature Conservancy (TNC) conducted a strategic analysis of the Columbia Plateau Ecoregion to identify sites that could conceivably maintain all viable native species and communities within the Ecoregion (Soper 1999). They concluded that protection of approximately 139 sites would achieve their goals. They further prioritized this list, identifying 27 sites to work on over the next five years. Several of the priority sites are within the Palouse steppe area, as well as within the Channeled Scablands ecosystem.

1.8.7 The Service's Columbia RiverBasin Ecoregion

The Service's Columbia River Basin Ecoregion Goal #1 reads as follows: "Prevent species decline, expedite recovery of candidate, threatened, and endangered species, and preclude future species listings by conserving and restoring a diversity of native fish, wildlife, and plant species and their habitats in the Columbia River Basin" .

1.8.8 Interior Columbia Basin Ecosystem Management Plan

This project was an ambitious effort covering the majority of the Inland Northwest (an area the size of France) and is a good source of broadscale ecosystem analysis for the region. The scientific assessment which underlies the plan identified numerous threats to the ecological integrity of the basin (Quigley et al. 1996). Within the vicinity of Turnbull Refuge, report authors listed the primary opportunities to address the risks to ecological integrity as: "maintenance or restoration of riparian conditions; restoration of productive aquatic areas; and conservation of fish strongholds and unique aquatic areas."

1.8.9 Spokane County Comprehensive Plan

Spokane County recently completed an update of its Comprehensive Plan (Spokane County 2002). The Plan calls for minimization of habitat fragmentation. Furthermore, the County's Critical Areas Ordinance requires the protection of a variety of priority habitats, including wildlife corridors and landscape linkages. A University of Washington Department of Urban Design and Planning class analyzed the County's biodiversity and habitat to assess which lands, if protected, would conserve all the biodiversity of the County under the most efficient design possible. The students ultimately recommended a map of reserves, wildlife corridors and landscape linkages that would meet this objective (see http://depts.washington.edu/-rsal/GAP/spokane_brochure/index.html; also Stevenson 1998; University of Washington 1998). Much of the area surrounding Turnbull Refuge is encompassed in the area the students recommended be maintained as a reserve and wildlife corridor. The County has incorporated the recommendation by designating many of these areas as "open space" in its plan and zoning others under a low density "Rural Conservation" category.

1.9 REFUGE VISION

Turnbull National Wildlife Refuge will be key to preserving the unique Channeled Scablands habitat of Eastern Washington, with its broad diversity of plants and animals. The area will serve as an important link in migrations for at least 139 species of birds, but its best function will be as a production area for at least 100 bird species. Habitat diversity will provide a stable, productive and flexible resource to ensure that

the native faunal diversity of the Refuge is maintained. The Refuge will restore and maintain ecosystem processes that provide for a natural diversity of flora and fauna native to the wetland, aspen/riparian, steppe, and ponderosa pine communties of Eastern Washington. Maintenance of biodiversity will be further supported by the conservation of threatened and endangered species. Partnerships with neighbors, non-profit organizations, and other government agencies will ensure the maintenance of biologically effective landscape linkages and corridors between the Refuge and other intact areas of vegetation zones representative of this ecoregion. Efforts will be made to conserve and restore additional Channeled Scabland habitats and wetlands.

Wetland habitats will have a legally secure water supply based on annual precipitation and runoff. The quality of water entering the Refuge will be monitored and maintained at a standard suitable for ensuring ecological integrity. Water management facilities make for more efficient use of water, bypassing high flows, maintaining desired food and cover plants, and providing optimum diversity.

Grassland steppe habitats will be healthy and diverse, sustaining a variety of both migratory and resident birds as well as other indigenous plants and wildlife. Healthy forested uplands managed by the reintroduction of fire will provide a natural distribution and diversity of structural and successional stages to benefit forest dependent wildlife.

Research and environmental education opportunities will be provided. Visitor and education facilities will assist with interpreting the values of wildlands and wildlife to the public. Visitors will experience the quiet solitude that only nature can provide. Opportunities for outstanding aesthetics, wildlife observation, and other compatible uses will be provided.

Volunteers will support Refuge public use programs, Refuge monitoring and research, and habitat restoration. Partnerships with Friends of Turnbull Refuge, the Spokane chapter of the Audubon Society, the Inland Northwest Land Trust, the Inland Northwest Wildlife Council and other non-profit organizations, neighbors, and other federal, state and county agencies will enhance opportunities to realize Refuge goals and objectives.

1.10 REFUGE GOALS

Goal 1: Contribute to protection of local watersheds so as to maintain adequate water quality and quantity for native Refuge wetland species.

Goal 2: Provide habitat conditions essential to the conservation of birds and other wildlife within a variety of wetland complexes**.**

Goal 3: Restore Refuge aspen and ponderosa forest to a natural distribution of stand structural and successional stages to benefit forest-dependent wildlife.

Goal 4: Protect and restore the natural distribution and diversity of grassland and shrub steppe habitats to benefit wildlife.

Goal 5: Support the conservation of threatened and endangered species in their natural ecosystems.

Goal 6: Support the maintenance of biologically effective landscape linkages and corridors between the Refuge and other intact areas of vegetation zones representative of this ecoregion.

Goal 7: Foster appreciation of and support for the Refuge and the Channeled Scablands ecosystem through quality environmental education, interpretation, wildlife-dependent recreation, and outreach compatible with the Refuge purposes and mission .

Goal 8: Encourage and support research that substantially contributes to our understanding of the Channeled Scablands ecosystem.

1.11 PUBLIC INVOLVEMENT IN THE DEVELOPMENT OF THE CCP

Public involvement was sought throughout the development of the CCP, starting in the summer of 1999. Public involvement strategies emphasized face-to-face meetings with key agencies, tribes with ancient links to the area, elected officials, and Refuge neighbors. The Refuge also held open houses, conducted a planning workshop, sent newsletters, conducted surveys, and gave presentations at community organizations to inform the public, invite discussion and solicit feedback.

A mailing list of approximately 900 persons and organizations is maintained at the Refuge and was used to distribute planning updates and public meeting announcements. Appendix K contains a brief summary of the events, meetings, and outreach tools that were used in our public involvement efforts.

1.12 ISSUES

Under the National Environmental Policy Act (NEPA), federal agencies may identify numerous issues after scoping is completed. However, only major issues drive the formulation of alternatives. Based on the scoping efforts undertaken, the following major issues were identified for the Turnbull Refuge.

Issue 1. Elk Management and Hunting

Archeological evidence suggest that elk may have once been fairly widespread in eastern Washington and were hunted by native Americans residing in the area. However, elk appear to have been eliminated by the time of Euro-American settlement. Elk reintroductions in the early 1900s resulted in expanding herds throughout much of the forested portions of eastern Washington. From these reintroductions and subsequent transplants, elk populations increased dramatically in the mid-twentieth century. Elk were first observed on the Refuge in the late 1950s. Although increasing numbers were observed on the Refuge and in most of southern Spokane County since their first appearance, dramatic increases did not occur until the early 1980s. The herd that inhabits the Refuge and local vicinity (Hangman Creek subherd) was estimated at 115 to 219 animals in 1997 (95 percent confidence interval, population estimate from Meyers 1998). In November 2004, 354 elk were counted in the herd, with 100 off-Refuge and the rest on the Refuge.

Research underway by the State and Eastern Washington University indicates that the Refuge is disproportionately important to the local elk population as security cover. As a result, there has been heavy browsing of young aspen and other deciduous shrubs and trees on the Refuge. In addition, several neighbors have complained of elk damage to their hay, other agricultural crops, fences, and ornamental shrubs since the early 1990s and feel that the Refuge should take a more active role in limiting elk numbers. Since 1992, two claims have been paid by the State for elk damage to agricultural crops. Complaints have declined since 1999 as a result of several local landowners leasing their lands for hunting.

On Refuge hunting of big game and/or waterfowl has been proposed at various times in the past (1959, 1966, and 1987) but never was widely supported by the community and has never been permitted on the Refuge for any species.

Surveys conducted in 1999 indicate 82 percent of the public surveyed (485 respondents) believe that the Refuge should remain closed to hunting. Half of the 88 respondents who felt that the Refuge should be opened to hunting, also felt that all types of hunting should be allowed. Eighteen respondents felt that only big game hunting should be allowed (EDAW 1999). Respondents to other surveys distributed at the public scoping meetings in the spring of 2000, indicated that 29 percent of the participants identified the prohibition of hunting as an

important Refuge issue. However, nearly 13 percent felt that the most important issue was allowing hunting as a management tool.

Washington Department of Fish and Wildlife and others advocate hunting or other management tools to bring the elk population numbers down to a level considered "socially acceptable" (i.e. a level which does not trigger many depredation complaints).

Issue Summary: What kinds of elk management tools, if any, should be utilized at the Refuge to address habitat damage and depredation problems?

Issue 2. Recreational Development and Opportunities, Allowable Uses, and Visitor Access

For many years, the Refuge has maintained a 2,200-acre area open to public driving, wildlife viewing and photography, hiking, and environmental education. The remainder of the Refuge is closed to public use. Interpretive opportunities are fairly limited and trail lengths are short.

An opportunity to inquire into what the public values at Turnbull Refuge occurred during public scoping at the outset of the CCP. As part of this process, the Service distributed a short survey to its mailing list and to attendees of the public scoping meetings in February and March, 2000. Eighty-six participants completed the survey. The majority of the respondents to the survey indicated that wildlife is what makes Turnbull special to them. Nature, interpretation and environmental education were also important reasons for visiting the Refuge. Ninety-three percent of the individuals surveyed agreed that Refuge facilities were adequate. A segment of the public is interested in seeing a higher level of interpretive and trail facilities for public enjoyment and use.

The environmental education program (EE) has been underway for more than thirty years. The EE program provides students from the Spokane area an opportunity for field-based science learning and supports teachers in meeting state educational requirements. However, the program has no permanent funding, and many requests go unmet because of limited staff and facilities. To date, the EE program has been supported by volunteers, an active partnership program, and fluctuating Refuge funds supplemented by grants. Many members of the public have expressed interest in expanding the EE program.

In May of 2000, the Washington State Parks and Recreation Commission (WSPRC) opened the 130-mile long Columbia Plateau Trail on an abandoned railroad right-of-way in Eastern Washington. The new trail lies adjacent to some of the Refuge's most productive waterfowl lakes, Long Lake and Ballinger Lake. The trail, when fully developed, will run from Pasco to Fish Lake, and traverse five miles of the Refuge, through the heart of the Refuge's closed area. Projections of use for this section of trail are 30,000 people annually. State Parks and some users have asked the Refuge to create side trails off of the Columbia Plateau trail so that they can loop through the area. Concerns remain, however, about potential disturbance to waterfowl, disturbance to big-game populations in this area, and potential for trespass from the Columbia Plateau Trail into the closed area of the Refuge.

Public participation in nature activities, including wildlife observation and photography and visiting interpretive centers, is projected to grow by approximately 30 percent over the next 15 years in the state of Washington (IAC, 2002a). An assessment completed by IAC (IAC 1995) identified trails and environmental education as the two highest outdoor recreation needs in the State.

Hunting is one of the six priority public uses identified in the Refuge Improvement Act of 1997. Hunting participation in the State is expected to decrease, however, over the next fifteen years (IAC, 2002a). All priority public

uses must be considered when developing public use alternatives in the CCP.

Issue Summary: What kind of public recreational opportunities should the Refuge seek to provide over the next 15 years, and how should the Refuge manage these uses to maintain compatibility with its purposes?

Issue 3. Protection of Habitats, Water Quality and Quantity Off-Refuge

Refuge wildlife and their habitats are connected to and depend upon the surrounding landscape. The Refuge Improvement Act of 1997 requires maintenance of the Refuge System's biological integrity, diversity and environmental health. The Act also directs the Secretary to maintain adequate water quality and quantity to fulfill the purposes of each Refuge and acquire, under State law, water rights that are needed for Refuge purposes.

In consideration of these mandates, the planning team has considered whether Turnbull Refuge encompasses sufficient habitat to maintain the wildlife it was established to protect. The team also considered whether water supplies that feed Refuge wetlands are adequate for the future, and whether they are free of pollutants.

For most of the Refuge's existence, surrounding land use has mostly complemented the Refuge by maintaining open space, providing a larger habitat base, and serving as critical linkages to other undisturbed habitats. The situation around the Refuge is, however, changing. Spokane County's population has increased by 30 percent over the past 20 years. Accelerated home construction, business developments, and the transportation infrastructure to service this growing population have begun to isolate the Refuge from surrounding habitats. This development increases the potential for threats to wildlife and their habitats, such as contamination of air and water, altered or depleted supplies of surface and ground water, loss of connectivity to other suitable or complimentary habitats, and the invasion of exotic plant and animal species that erode the integrity of the Refuge. It is likely that the biological integrity, diversity and environmental health of the Refuge will be at risk over the long term if the Refuge is managed as an isolated island of habitat without attention to maintaining water supplies and connectivity to adjacent habitats.

Several scientific assessments in the area (Cassidy et al. 1997a, Wisdom 2000, Soper 1999) indicate that much of Eastern Washington's wildlife and habitats remain unprotected.

Mechanisms for land protection could include: cooperative agreements, conservation easements, fee title acquisition, leases, donations, transfers, and exchanges. Only willing participants would be considered for any of these approaches.

Issue Summary: How can the Refuge best ensure protection of water supplies and healthy wildlife habitats within the Refuge vicinity, to provide long term benefits for its species and habitats?